

REMARKS

This is a full and timely response to the Office Action mailed February 6, 2008.

No claims have been amended in this response. Thus, claims 1-7 are currently pending in this application, with claims 3 and 4 being allowed.

In view of this response, Applicant believes that all pending claims are in condition for allowance. Reexamination and reconsideration in light of the above amendments and the following remarks is respectfully requested.

Rejection under 35 U.S.C. §103

Claims 1, 2 and 5-7 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Ahn et al. (U.S. Patent No. 6,471,753) in view of Voliva et al. (U.S. Patent No. 4,473,380). Applicant respectfully traverses this rejection.

To establish a *prima facie* case of obviousness, the prior art references must teach or suggest all the claim limitations, and provide some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Here, in this case, it is respectfully submitted that the combination of Ahn et al. and Voliva et al. (like the previous combination of Ahn et al. and Bishoff) still fails to teach or suggest all the claim limitations with particular emphasis on the limitation "*a steam supply that provides a steam of said liquid and feeding said steam to said liquid collecting end of said carrier for condensation of said liquid therearound in order that the condensed liquid is fed through said carrier to said discharge end*".

Ahn et al. discloses a device for collecting dust using highly charged hyperfine liquid droplets. However, as the Examiner noted in the Office Action, Ahn et al. does not teach or suggest a steam supply. To cure this deficiency of Ahn et al., the Examiner cites the teachings of Voliva et al. which describes a pollution control system.

Based on Applicant's review of Voliva et al., Applicant does not believe that the teachings of Voliva et al. cures the deficiencies of Ahn et al. Voliva et al. discloses a pollution control system for removal of condensable pollutants from a high-temperature gas stream. Contrary to the Examiner's arguments in the Office Action, Voliva et al. fails to teach or suggest the use of

the condensed water as a supply for the capillary carrier, but simply discloses the disposal of the condensed water as a waste from the pollution control system. At column 3, lines 61 to 64, of the reference, Voliva et al. describes that "*only limited water condensation takes place in the bed 30, the great majority of water present in the exhaust air remains in vapor form*". Also, at column 4, lines 20 to 21, of the reference, Voliva et al. describes that "waste water is removed from the recirculation tank 36 for disposal". Further, at column 4, lines 34 to 39, of the reference, Voliva et al. describes that "water vapor condensed in the tower 24 is carried from the tower as waste through line 60, or forms a portion of the solvent fog collected in the separator 70. All water vapor entering the separator 70 passes therethrough without change, and is discharged to the atmosphere".

Thus, as is apparent from the above description, Voliva et al. does not teach supplying the condensed liquid to the liquid collecting end of the capillary carrier. Although the Examiner notes that Voliva et al. teaches a steam supply by air stream 22 to a tower 24, and limited water condensation of the steam into liquid in the bed 30, Voliva et al. does not teach condensing the once vaporized liquid back to liquid and feeding such liquid through the capillary carrier. Thus, Applicant believes that it is not possible to combine the teaching of Voliva et al. to Ahn et al to arrive at the claimed invention. In other words, Applicant believes that the combination of Voliva et al. and Ahn et al. does not suggest to one skilled in the art the feeding of the condensed liquid to the liquid collecting end to be discharged in the form of minute liquid particles as a result of being applied a high voltage.

In addition, Applicant also submits that there is no motivation to combine the teachings of Ahn et al. with the teachings of Voliva et al. According to Section 2143.01 of the Manual of Patent Examining Procedure, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Also, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Voliva et al. relates to a method of removing condensable pollutant materials from a high-temperature gas stream. As a result, Voliva et al. does not teach condensing the once vaporized liquid back to liquid and feeding such liquid through the capillary carrier since such a modification would render the invention of Voliva et al. unsatisfactory for its intended purpose as well as change the principle of operation of the pollution control system of Voliva et al. since the reference expressly teaches all water vapor and condensed water be discharged and disposed as waste.

Still further, under U.S. practice, "*[I]n order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.*" *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992).

Ahn et al. is directed to a device for collecting dust using highly charged hyperfine liquid droplets formed through an electro-hydrodynamic atomization process, and Voliva et al. is directed to a pollution control system. Thus, these two references are in different and non-analogous areas of art. Further, Voliva et al.'s use of steam is not *reasonably pertinent to the particular problem with which the inventor was concerned* which is to avoid the precipitation of impurities at the discharged end of the carrier for maintaining stable electrostatic atomization over a long period of use. The use of steam in the present invention prevents the mineral components contained in the water from advancing to the discharge end of the capillary carrier and reacting with CO₂ in the air to precipitate as MgO or CaCO₃ which would impede the electrostatic atomization effect.

In contrast, as noted above, the invention of Voliva et al. relates to a pollution control system for removal of condensable pollutants from a high-temperature gas stream. The purpose of the condensed water and water vapor in Voliva et al. is to facilitate the removal of the condensed pollutants which is the reason why all water vapor and condensed water is discharged and disposed as waste in Voliva et al. Such a purpose is completely unrelated to the problems of the present invention and the particular area of art of Ahn et al. Hence, it is clear that Ahn et al. and Voliva et al. are in different areas of arts and cannot be combined under U.S. practice.

Thus, in view of the above, it is clear that Voliva et al. (1) does not teach or suggest the use of the condensed water as a supply for the capillary carrier, and fails to remedy the deficiency of Ahn et al., and (2) would not motivate one skilled in the art to combine the teachings of Ahn et al. and Voliva et al. Hence, Applicant believes that claims 1 and 6 are not obvious from the combination of the above two references and are allowable over the applied art.

Claims 2, 5 and 7 depend from claim 1 and include all of the features of claim 1. Thus, the dependent claims are allowable at least for the reasons claim 1 is allowable as well as for the features they recite.

Therefore, withdrawal of the rejection is respectfully requested.

Further, Applicant asserts that there are also reasons other than those set forth above why the pending claims are patentable. Applicant hereby reserves the right to submit those other reasons and to argue for the patentability of claims not explicitly addressed herein in future papers.

CONCLUSION

For the foregoing reasons, all the claims now pending in the present application are believed to be clearly patentable over the outstanding rejections. Accordingly, favorable reconsideration of the claims in light of the above remarks is courteously solicited. If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

Dated: May 6, 2008

Respectfully submitted,

By: _____


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